

# Comparison of AIRS Ozone with OMI and Coincident Ozonesondes

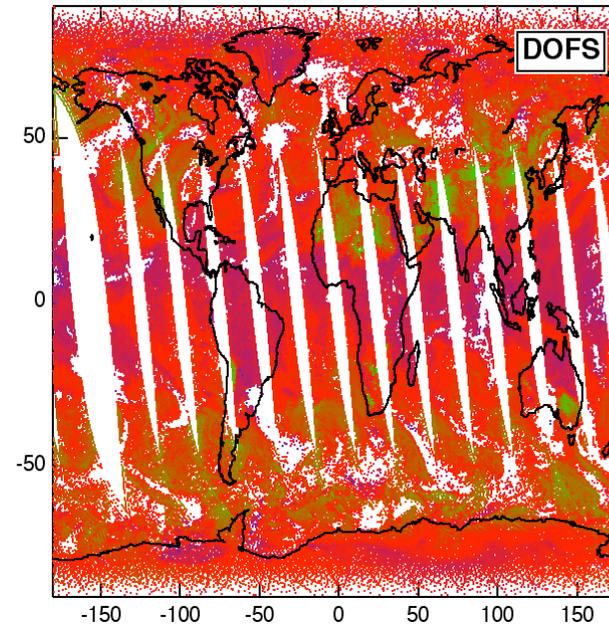
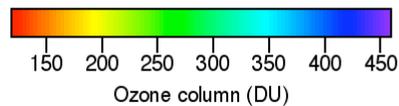
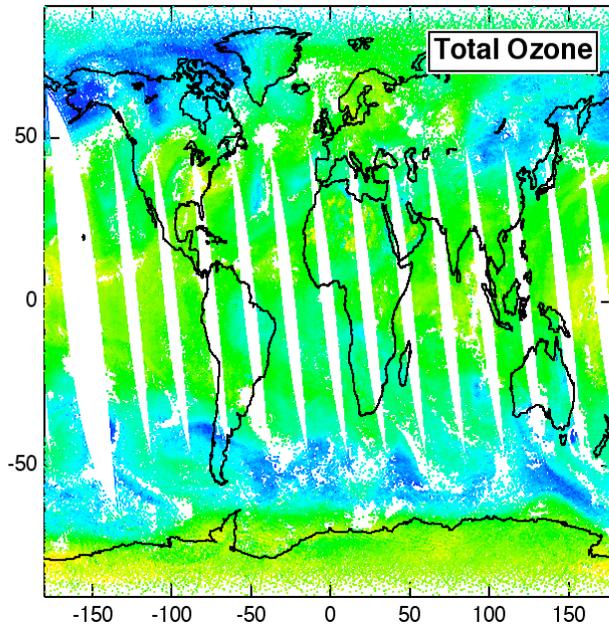
Bill Irion

Jet Propulsion Laboratory  
California Institute of Technology

With thanks to  
Eric Fetzer and Evan Manning

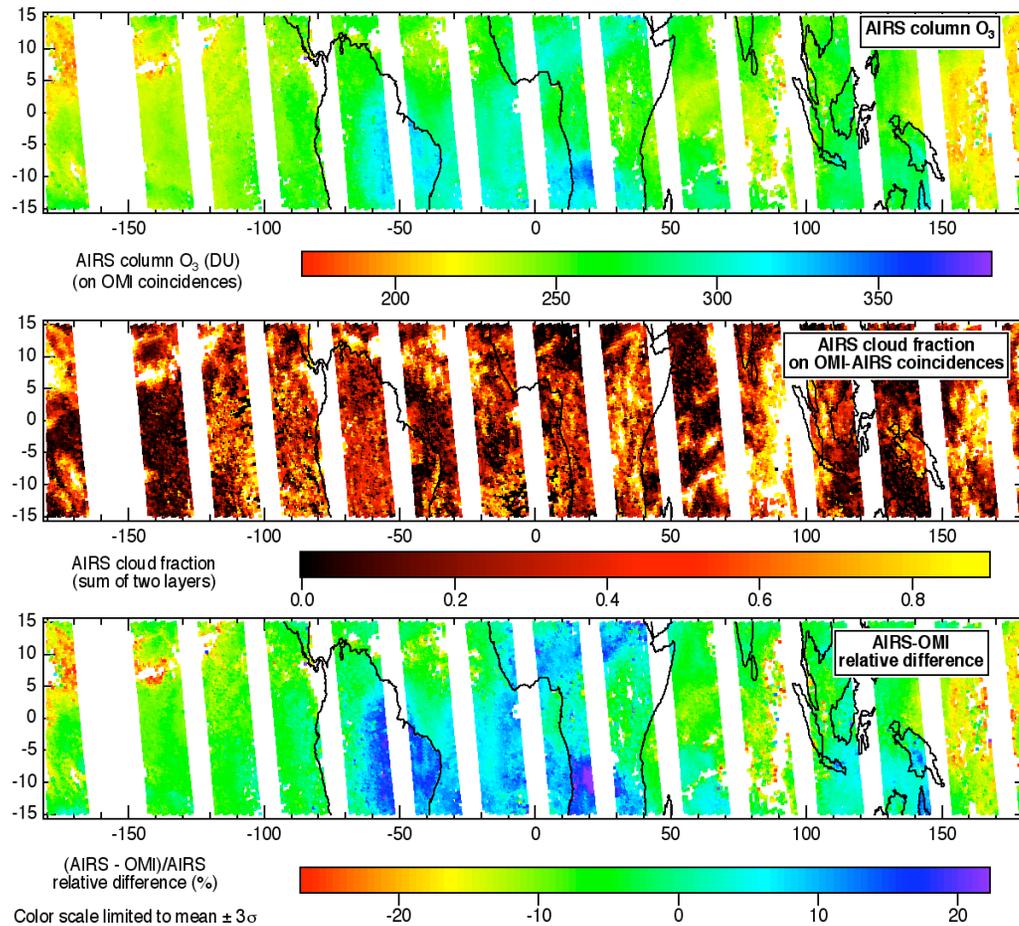
# AIRS Total Ozone Column

November 3, 2003 Daytime, qual\_o3 = 0



- Low DOFS over tropics and cold surfaces
- Higher DOFS over hotter regions or high ozone column

# Tropical comparison of AIRS to OMI



- Negative AIRS-OMI bias in cloudy regions
- Positive AIRS-OMI bias in regions of high ozone and low cloud

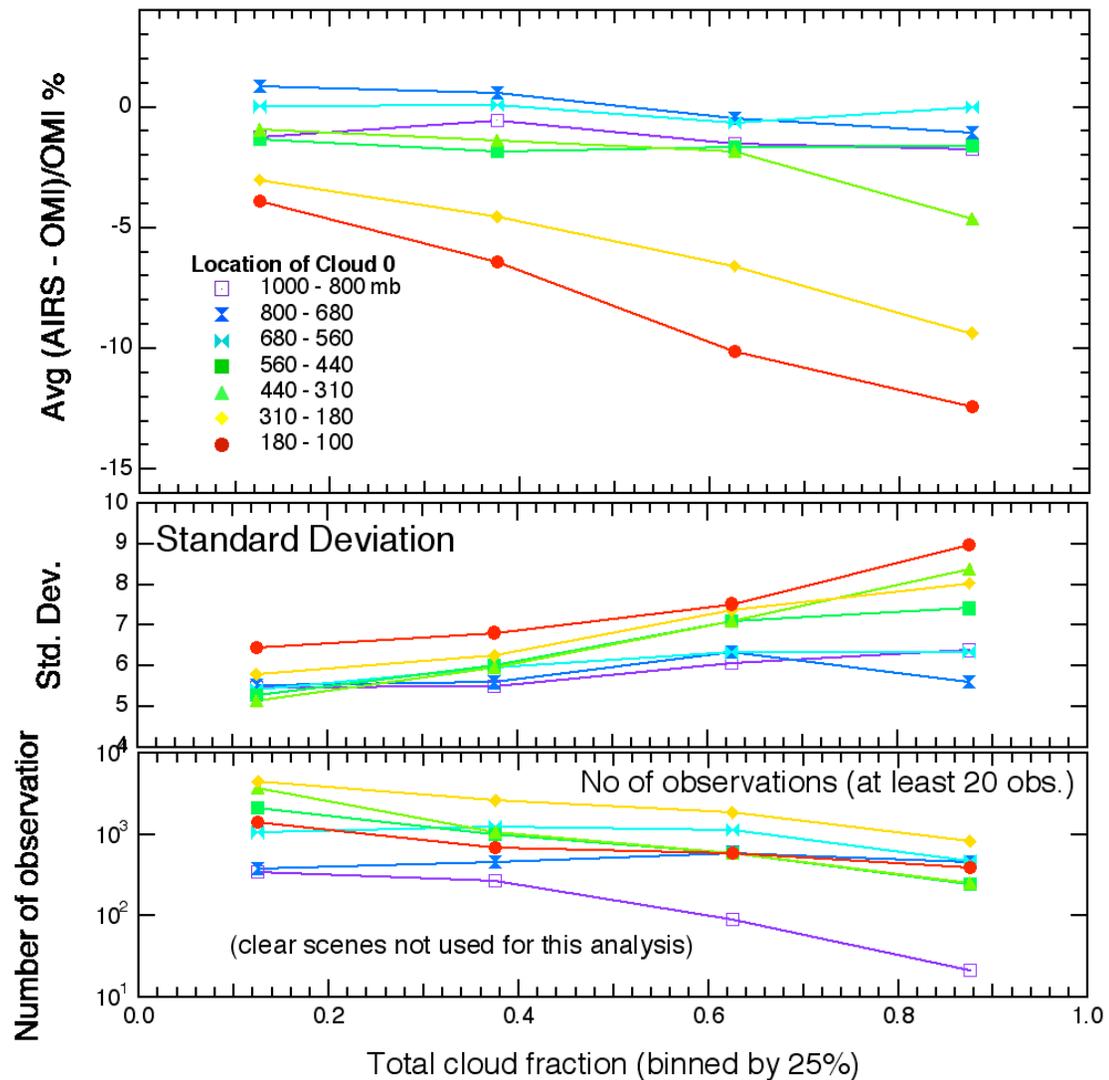
Comparisons  
under  
different  
cloudy  
conditions

30°S – 30°N  
ocean only

AIRS - OMI  
Total Column Comparison  
vs. Total Cloud Fraction

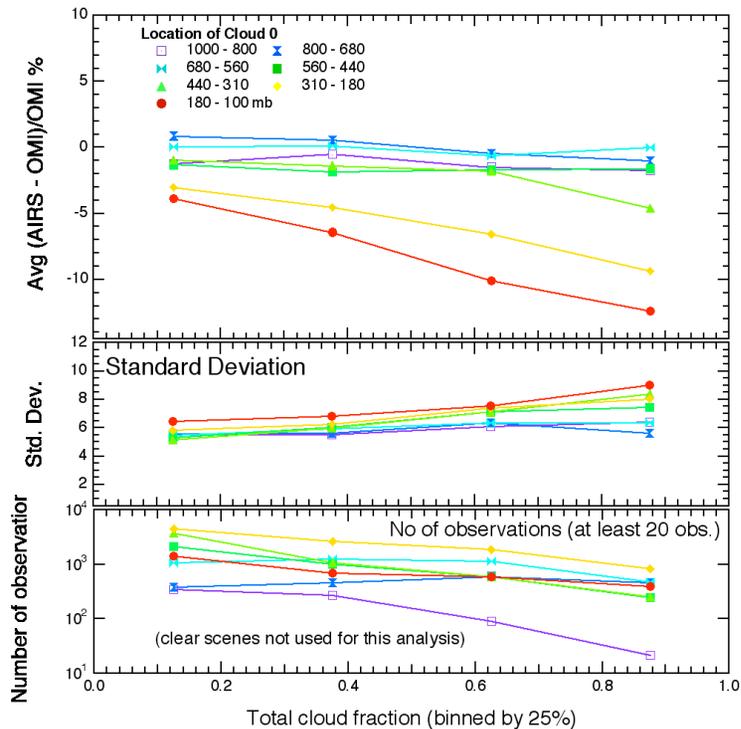
November 3, 2004  
Ocean Only  
30°S - 30°N

Ozone quality flag = 0

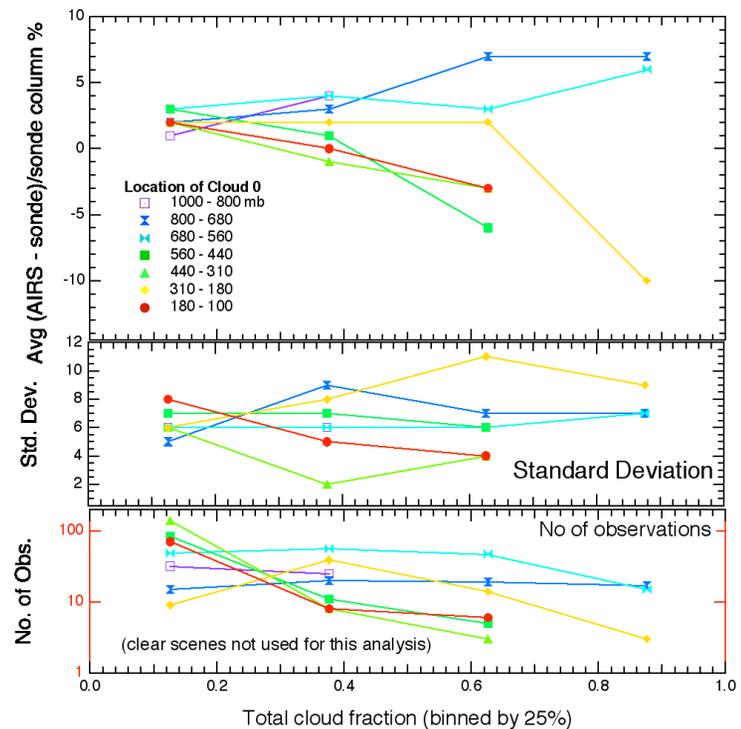


# Comparison of AIRS to OMI (full column) and sondes (partial column)

**AIRS - OMI**  
**Total Column Comparison**  
 vs. Total Cloud Fraction  
 November 3, 2004  
 Ocean Only  
 30°S - 30°N  
 Ozone quality flag = 0

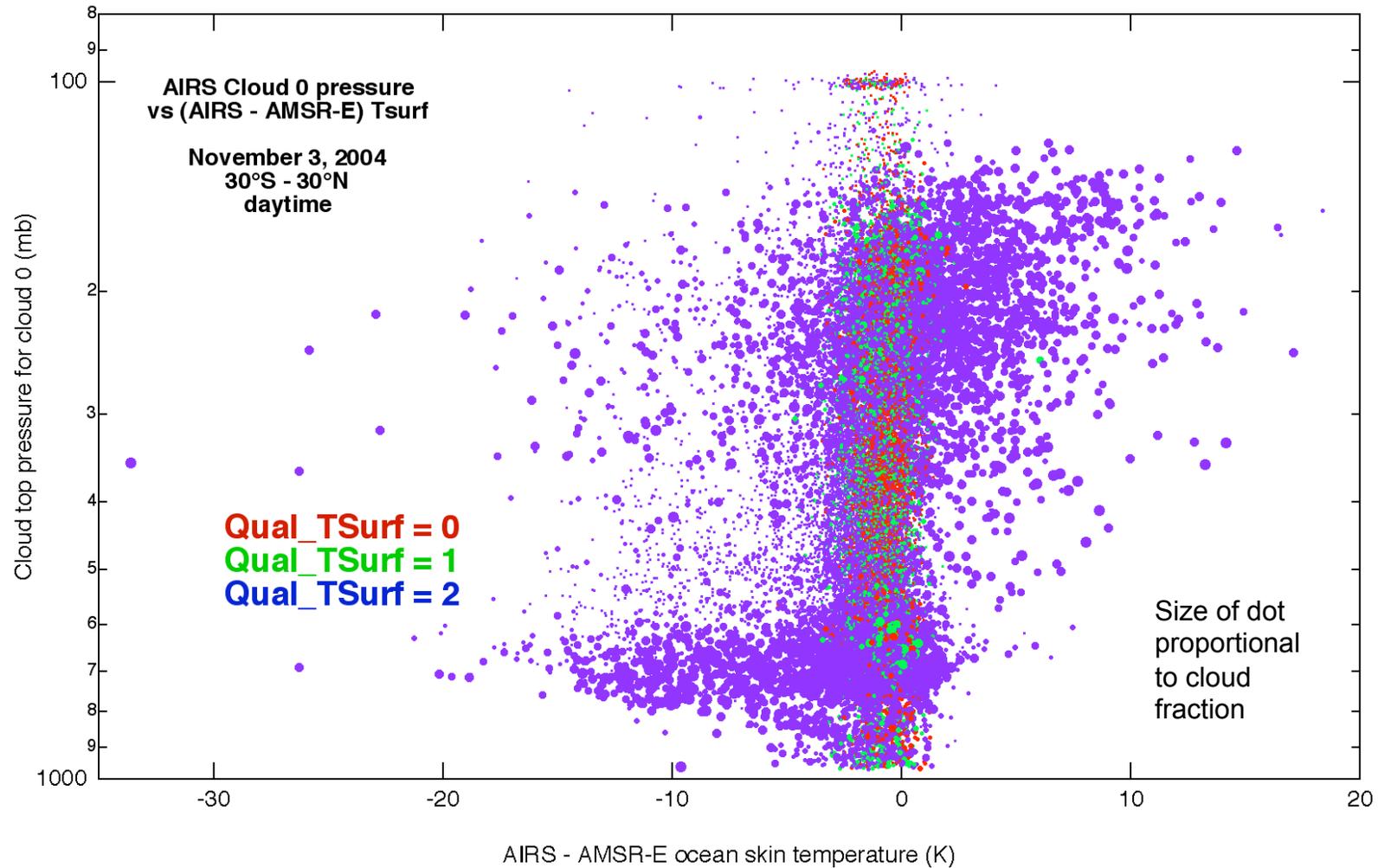


**AIRS - Sonde**  
**Partial Column Comparison**  
 (ground to sonde burst point)  
 vs. Total Cloud Fraction  
 Ocean Only  
 30°S - 30°N  
 Ozone quality flag = 0

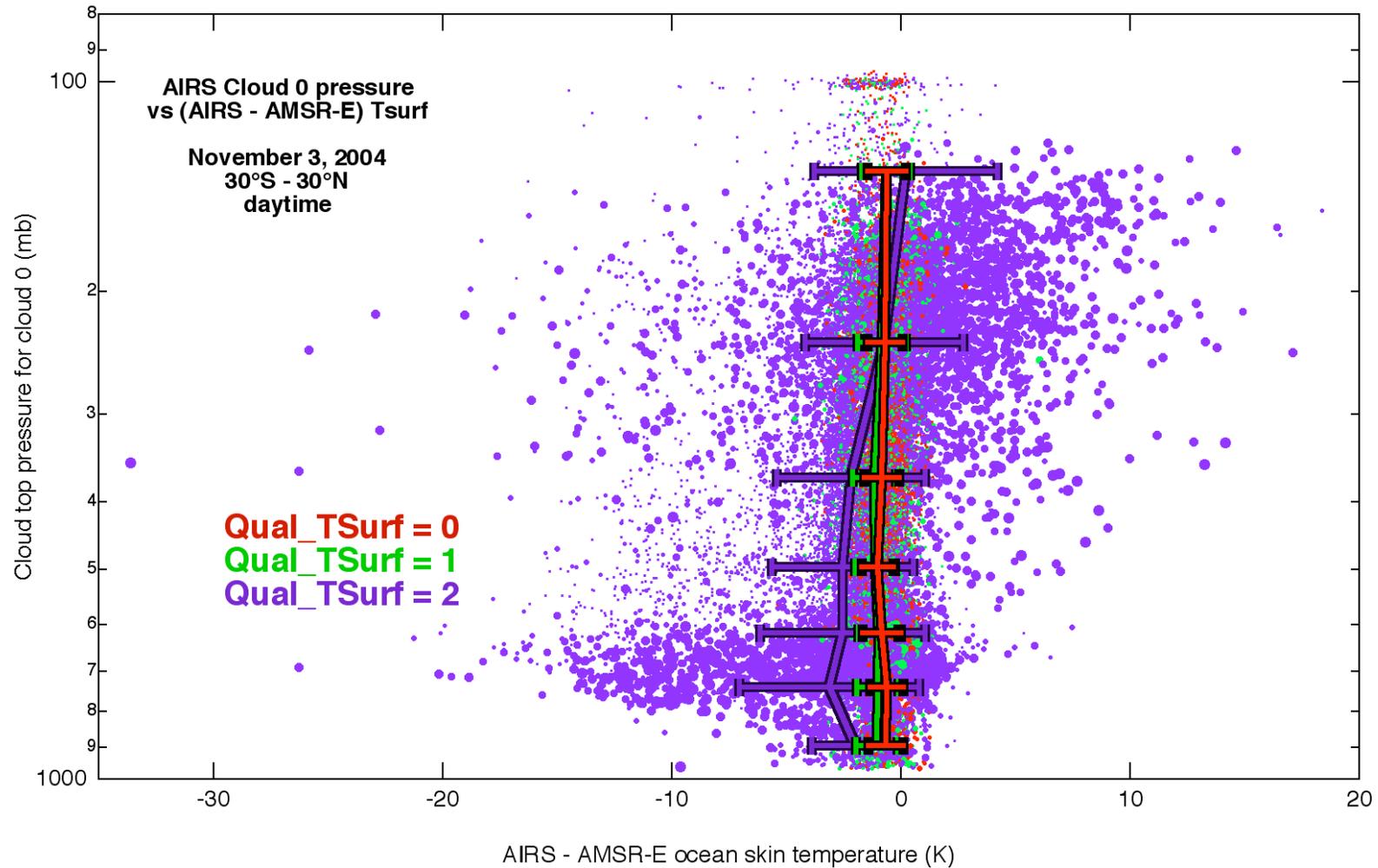


Note: More than one AIRS observations can be matched to a sonde profile.

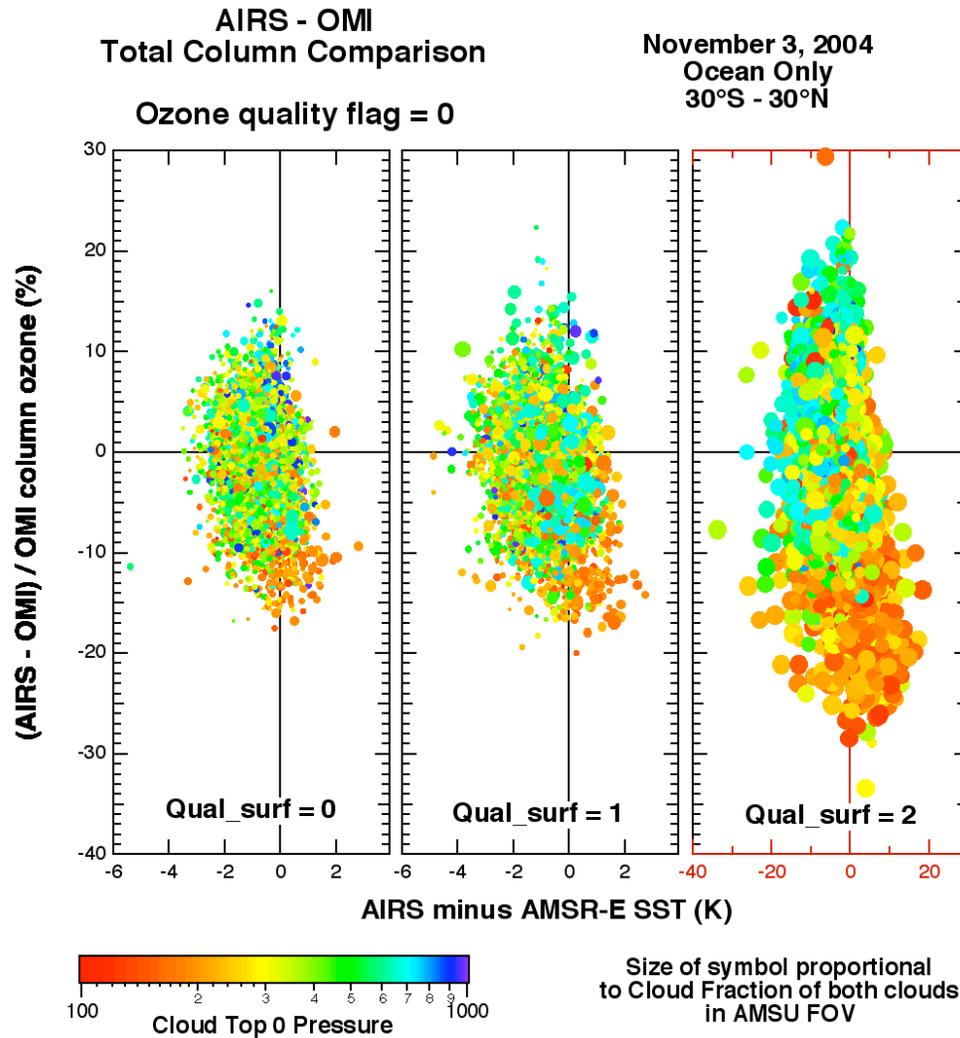
# Is it a surface temperature problem? Compare AMSR-E to AIRS...



# Is it a surface temperature problem? Compare AMSR-E to AIRS...



# AIRS-OMI O3 difference vs AIRS-AMSRe Tsurf difference



# Conclusions and Future Work

- Quality of surface temperature retrieval matters for ozone retrieval.
  - Re-examine determination of ozone qual flag?
- Improve sonde comparisons using SBUV or MLS to extend sonde above burst point.
- Similar tests can be done with total water
  - These would provide useful tests for V6.